



IFWO

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/804,763

DATE: 07/27/2004

TIME: 12:17:50

Input Set : A:\A-72186-1.ST25.txt

Output Set : N:\CRF4\07272004\J804763.raw

3 <110> APPLICANT: Qi, Yan
 4 Zhang, Xianghua
 5 Konigsberg, Paula
 7 <120> TITLE OF INVENTION: Gene Therapy Vectors Having Reduced Immunogenicity
 9 <130> FILE REFERENCE: A-72186-1/TAL/DCF (471702-00008)
 11 <140> CURRENT APPLICATION NUMBER: US 10/804,763
 12 <141> CURRENT FILING DATE: 2004-03-19
 14 <150> PRIOR APPLICATION NUMBER: US 60/456,378
 15 <151> PRIOR FILING DATE: 2003-03-19
 17 <160> NUMBER OF SEQ ID NOS: 51
 19 <170> SOFTWARE: PatentIn version 3.2
 21 <210> SEQ ID NO: 1
 22 <211> LENGTH: 235
 23 <212> TYPE: PRT
 24 <213> ORGANISM: Homo sapiens
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 33 20 25 30
 36 Trp Asn Leu Gly Glu Thr Val Glu Leu Lys Cys Gln Val Leu Leu Ser
 37 35 40 45
 40 Asn Pro Thr Ser Gly Cys Ser Trp Leu Phe Gln Pro Arg Gly Ala Ala
 41 50 55 60
 44 Ala Ser Pro Thr Phe Leu Leu Tyr Leu Ser Gln Asn Lys Pro Lys Ala
 45 65 70 75 80
 48 Ala Glu Gly Leu Asp Thr Gln Arg Phe Ser Gly Lys Arg Leu Gly Asp
 49 85 90 95
 52 Thr Phe Val Leu Thr Leu Ser Asp Phe Arg Arg Glu Asn Glu Gly Tyr
 53 100 105 110
 56 Tyr Phe Cys Ser Ala Leu Ser Asn Ser Ile Met Tyr Phe Ser His Phe
 57 115 120 125
 60 Val Pro Val Phe Leu Pro Ala Lys Pro Thr Thr Thr Pro Ala Pro Arg
 61 130 135 140
 64 Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg
 65 145 150 155 160
 68 Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly
 69 165 170 175
 72 Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr
 73 180 185 190
 76 Cys Gly Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn His
 77 195 200 205
 80 Arg Asn Arg Arg Arg Val Cys Lys Cys Pro Arg Pro Val Val Lys Ser

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98 tggccttacc agtgaccgcc ttgctcctgc cgctggcctt gctgctccac gccgccaggc      180
100 cgagccagtt ccgggtgtcg ccgctggatc ggacctggaa cctggggcgag acagtggagc      240
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130 caggccagag ctaccgcgag agttctcaga atcatgctga gagagctgga ggcacccatg      1140
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142 aatgtaaaaa atatcagact tttttttttt ataataaagc ctaaaattgt atagacctaa      1500
144 aataaaatga agtgggtgagc ttaaccctgg aaaatgaatc cctctatctc taaagaaaaat      1560
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156 ctgctgtccc aaacatgcac ttcttgctt aaggatatgt acaagcaatg cctgcccatt      1920
158 ggagagaaaa aacttaagta gataaggaaa taagaaccac tcataattct tcaccttagg      1980
160 aataatctcc tgtaaatatg gtgtacattc ttctgatta ttttctacac atacatgtaa      2040
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171 <210> SEQ ID NO: 3
172 <211> LENGTH: 198
173 <212> TYPE: PRT

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Input Set : A:\A-72186-1.ST25.txt

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174 <213> ORGANISM: Homo sapiens
 176 <400> SEQUENCE: 3
 178 Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
 179 1 5 10 15
 182 His Ala Ala Arg Pro Ser Gln Phe Arg Val Ser Pro Leu Asp Arg Thr
 183 20 25 30
 186 Trp Asn Leu Gly Glu Thr Val Glu Leu Lys Cys Gln Val Leu Leu Ser
 187 35 40 45
 190 Asn Pro Thr Ser Gly Cys Ser Trp Leu Phe Gln Pro Arg Gly Ala Ala
 191 50 55 60
 194 Ala Ser Pro Thr Phe Leu Leu Tyr Leu Ser Gln Asn Lys Pro Lys Ala
 195 65 70 75 80
 198 Ala Glu Gly Leu Asp Thr Gln Arg Phe Ser Gly Lys Arg Leu Gly Asp
 199 85 90 95
 202 Thr Phe Val Leu Thr Leu Ser Asp Phe Arg Arg Glu Asn Glu Gly Tyr
 203 100 105 110
 206 Tyr Phe Cys Ser Ala Leu Ser Asn Ser Ile Met Tyr Phe Ser His Phe
 207 115 120 125
 210 Val Pro Val Phe Leu Pro Ala Lys Pro Thr Thr Thr Pro Ala Pro Arg
 211 130 135 140
 214 Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg
 215 145 150 155 160
 218 Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Gly Asn Arg Arg Arg
 219 165 170 175
 222 Val Cys Lys Cys Pro Arg Pro Val Val Lys Ser Gly Asp Lys Pro Ser
 223 180 185 190
 226 Leu Ser Ala Arg Tyr Val
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230 <210> SEQ ID NO: 4

231 <211> LENGTH: 2150

232 <212> TYPE: DNA

233 <213> ORGANISM: Homo sapiens

235 <400> SEQUENCE: 4

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 240 tggccttacc agtgaccgcc ttgctcctgc cgctggcctt gctgctccac gccgccaggc 180
 242 cgagccagtt ccgggtgtcg ccgctggatc ggacctggaa cctgggagag acagtggagc 240
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 250 ccctgagcga ctccgcgcga gagaacgagg gctactatct ctgctcggcc ctgagcaact 480
 252 ccatcatgta cttcagccac ttctgtccgc tcttctctgc agcgaagccc accacgaagc 540
 254 cagcgccgcg accaccaaca ccggcgccca ccatcgctc gcagcccctg tccctgcgcc 600
 256 cagagggctg ccggccagcg gcggggggcg cagggaaccg aagacgtgtt tgcaaatgtc 660
 258 cccggcctgt ggtcaaactg ggagacaagc ccagcctttc ggcgagatac gtctaaccct 720
 260 gtgcaacagc cactacatta cttcaaaactg agatccttcc ttttgaggga gcaagtcctt 780
 262 ccctttcatt ttttccagtc ttctccctg tgtattcatt ctcatgatta ttattttagt 840
 264 gggggcgggg tgggaaagat tactttttct ttatgtgttt gacgggaaac aaaactaggt 900
 266 aaaatctaca gtacaccaca agggtcacaa tactgttgtg cgcacatcgc ggtagggcgt 960

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268 ggaaaggggc aggccagagc taccgcgaga gttctcagaa tcatgctgag agagctggag 1020
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272 gagacagctt gatcaaaggc acacagcaag tcagggttgg agcagtagct ggagggacct 1140
274 tgtctcccag ctcagggtct tttcctccac accattcagg tctttctttc cgaggccctt 1200
276 gtctcagggt gaggtgcttg agtctccaac ggcaaggga caagtacttc ttgatacctg 1260
278 ggatactgtg cccagagcct cgaggaggta atgaattaaa gaagagaact gcctttggca 1320
280 gagttctata atgtaaaca tatcagactt ttttttttta taatcaagcc taaaattgta 1380
282 tagacctaaa ataaaatgaa gtggtgagct taaccttgga aaatgaatcc ctctatctct 1440
284 aaagaaaatc tctgtgaaac ccctatgtgg aggcggaatt gctctcccag cccttgcat 1500
286 gcagaggggc ccatgaaaga ggacaggcta cccctttaca aatagaattt gagcatcagt 1560
288 gaggttaaac taaggccctc ttgaatctct gaatttgaga taaaacatg ttcctgggat 1620
290 cactgatgac tttttatact ttgtaaagac aattgttggg gagccctca cacagccctg 1680
292 gcctctgctc aactagcaga tacagggatg aggcagacct gactctctta aggaggctga 1740
294 gagcccaaac tgctgtccca aacatgcact tccttgctta aggtatggta caagcaatgc 1800
296 ctgcccattg gagagaaaaa acttaagtag ataaggaaat aagaaccact cataattctt 1860
298 caccttagga ataatctcct gttaatatgg tgtacattct tctgattat tttctacaca 1920
300 tacatgtaaa atatgtcttt ctttttttaa taggggtgta ctatgctgtt atgagtggct 1980
302 ttaatgaata aacatttgta gcctcctctt taatgggtaa acagcaaaaa aaaaaaaaaa 2040
304 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2100
306 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2150

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309 <210> SEQ ID NO: 5

310 <211> LENGTH: 198

311 <212> TYPE: PRT

312 <213> ORGANISM: Pongo pygmaeus

314 <400> SEQUENCE: 5

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320 His Ala Ala Arg Pro Ser Gln Phe Arg Val Ser Pro Leu Asp Arg Thr
321 20 25 30
324 Trp Asn Leu Gly Glu Thr Val Glu Leu Lys Cys Gln Val Leu Leu Ser
325 35 40 45
328 Asn Pro Thr Ser Gly Cys Ser Trp Leu Phe Gln Pro Arg Gly Ala Ala
329 50 55 60
332 Ala Ser Pro Thr Phe Leu Leu Tyr Leu Ser Gln Asn Lys Pro Lys Ala
333 65 70 75 80
336 Ala Glu Gly Leu Asp Thr Gln Arg Phe Ser Gly Lys Arg Leu Gly Asp
337 85 90 95
340 Thr Phe Val Leu Thr Leu Ser Asp Phe Arg Arg Glu Asn Glu Gly Tyr
341 100 105 110
344 Tyr Phe Cys Ser Ala Leu Ser Asn Ser Ile Met Tyr Phe Ser His Phe
345 115 120 125
348 Val Pro Val Phe Leu Pro Val His Thr Arg Gly Leu Asp Phe Ala Cys
349 130 135 140
352 Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu
353 145 150 155 160
356 Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn His Arg Asn Arg Arg Arg
357 165 170 175
360 Val Cys Lys Cys Pro Arg Pro Val Val Lys Ser Gly Gly Lys Pro Ser
361 180 185 190

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365          195
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369 <211> LENGTH: 597
370 <212> TYPE: DNA
371 <213> ORGANISM: Pongo pygmaeus
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376 ccgagccagt tccgggtgtc gccgctggat cggacctgga acctgggcga gacggtggag      120
378 ctgaagtgcc aggtgctgct gtccaacccg acgtctggct gctcctggct cttccagccg      180
380 cgtggcgccg ccgccagtcc caccttcctc ctatacctct cccaaaacaa gcccaggcg      240
382 gccgaggggc tggacaccca gcggttctcg ggcaagaggt tgggggacac cttcgctcctc      300
384 accctgagcg acttcgcgcc ggagaacgaa ggctactatt tctgctcggc cctgagcaac      360
386 tccatcatgt acttcagcca cttcgtgccg gtcttcctgc cagtgcacac gagggggctg      420
388 gacttcgcct gtgatatcta catctgggcg cccttggccg ggacctgtgg ggctccttctc      480
390 ctgtcactgg ttatcacctt ttactgcaac cacaggaacc gaagacgtgt ttgcaaagt      540
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396 <211> LENGTH: 310
397 <212> TYPE: PRT
398 <213> ORGANISM: Mus musculus
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407          20          25          30
410 Glu Leu Arg Ile Phe Pro Lys Lys Met Asp Ala Glu Leu Gly Gln Lys
411          35          40          45
414 Val Asp Leu Val Cys Glu Val Leu Gly Ser Val Ser Gln Gly Cys Ser
415          50          55          60
418 Trp Leu Phe Gln Asn Ser Ser Ser Lys Leu Pro Gln Pro Thr Phe Val
419 65          70          75          80
422 Val Tyr Met Ala Ser Ser His Asn Lys Ile Thr Trp Asp Glu Lys Leu
423          85          90          95
426 Asn Ser Ser Lys Leu Phe Ser Ala Met Arg Asp Thr Asn Asn Lys Tyr
427          100         105         110
430 Val Leu Thr Leu Asn Lys Phe Ser Lys Glu Asn Glu Gly Tyr Tyr Phe
431          115         120         125
434 Cys Ser Val Ile Ser Asn Ser Val Met Tyr Phe Ser Ser Val Val Pro
435          130         135         140
438 Val Leu Gln Lys Val Asn Ser Thr Thr Thr Lys Pro Val Leu Arg Thr
439 145         150         155         160
442 Pro Ser Pro Val His Pro Thr Gly Thr Ser Gln Pro Gln Arg Pro Glu
443          165         170         175
446 Asp Cys Arg Pro Arg Gly Ser Val Lys Gly Thr Gly Leu Asp Phe Ala
447          180         185         190
450 Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Ile Cys Val Ala Leu
451          195         200         205
454 Leu Leu Ser Leu Ile Ile Thr Leu Ile Cys Tyr His Arg Ser Arg Lys

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RAW SEQUENCE LISTING ERROR SUMMARY

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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:37; N Pos. 2005

VERIFICATION SUMMARY

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Input Set : A:\A-72186-1.ST25.txt

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L:2293 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:1980